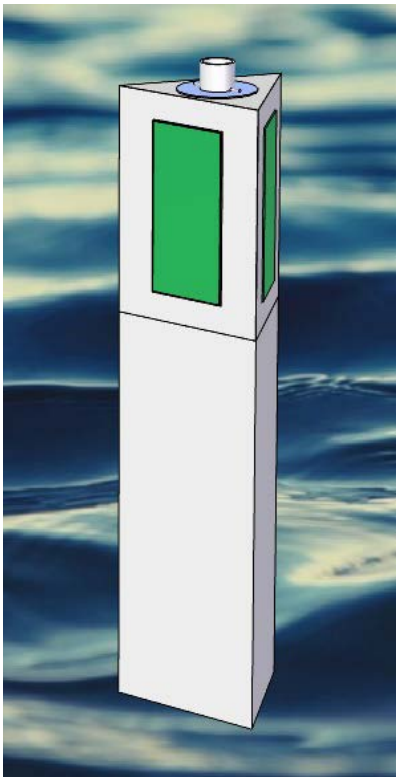
2016 Maritime RobotX Challenge

Preliminary Light Buoy Specifications, v1.0



Background

The purpose of this document is to describe the light buoy that will be used during the Scan the Code task of the 2016 Maritime RobotX Challenge. In order to complete this task, the craft will need to be capable of locating this buoy, safely approaching it, and observing a color sequence on the face of the buoy. General dimensions and suggested resources will be outlined in this document so teams may replicate the design to test against if they so choose. Other specifications and requirements of the Observation Task are in the Preliminary Rules & Tasks document.

Description

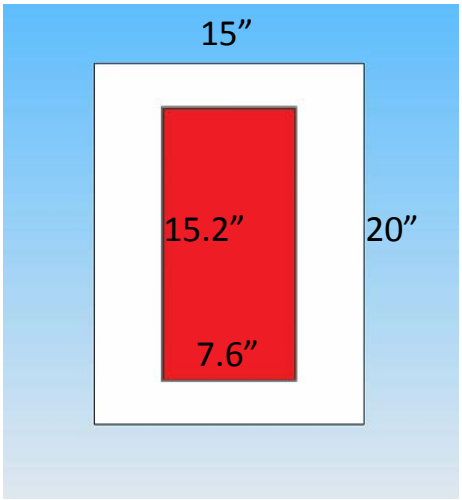
The light buoy will consist of three faces. Each face will have an RGB matrix panel that will be used to indicate the color sequence. These RGB panels are commonly used to make the large 'Jumbotron' displays used at sports venues.

The light sequence is created by having the entire panel display one color at a time; all 3 faces will act in unison. The panel will cycle through four colors; each color will be displayed for 1 second, then the panel will go dark (no color) for 2 seconds until the pattern repeats.

This light sequence will begin once the competitor's ASV entered autonomous mode and started an operational run for points.

Specifications

The dimensions (in inches) of one of the three identical faces are shown to the right. The top edge of these faces will be between 3 meters (9.8 feet) and 1 meter (3.2 feet) above the water. The border around the LED panel will be white, as illustrated. The structure supporting these faces is subject to change and is not specified here.



Parts Source

The LED panels to be used for the competition buoy panels were purchased at the following link: http://www.adafruit.com/products/420

Software that Teams may use to program and test their light panels is available at GitHub: https://github.com/madsci1016/RobotXLightBuoy

TEAMS NOTE: This is a Preliminary Draft of the Light Buoy Specifications. Contact Aamir Qaiyumi, Maritime RobotX Challenge Technical Director, at Aamir.Qaiyumi@RobotX.org with questions, or post your questions on the RobotX Google+ Community.